

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets

(11)

EP 1 130 919 A3



(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
10.04.2002 Bulletin 2002/15

(51) Int Cl.7: H04N 7/173, H04L 12/28,
H04J 11/00, H04J 13/02,
H04J 3/06, H04B 1/707,
H04L 5/02, H04L 27/38

(43) Date of publication A2:
05.09.2001 Bulletin 2001/36

(21) Application number: 01104541.6

(22) Date of filing: 25.07.1996

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE

(71) Applicant: Terayon Communication Systems, Inc.
Santa Clara, CA 95054 (US)

(30) Priority: 25.08.1995 US 519630
19.01.1996 US 588650
19.07.1996 US 684243

(72) Inventors:

- Rakib, Selim Shlomo, Dr.
Cupertino, California 95014 (US)
- Azenkot, Yehuda
San Jose, California 95129 (US)

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
96927270.7 / 0 858 695

(74) Representative: Brax, Matti Juhani
Berggren Oy Ab,
P.O. Box 16
00101 Helsinki (FI)

(54) Apparatus and method for digital data transmission

(57) A method and apparatus for carrying out synchronous co-division multiple access (SCDMA) communication of multiple channels of digital data over a shared transmission media (1160). The system includes modems at remote units (1164) and a central unit (1160) to receive time division multiplexed digital data arranged into timeslots or channels and uses orthogonal codes to encode each channel of multiple data and spread the

energy of each channel data over a frame of data transmitted in a code domain. Frames are synchronized as between remote (1164) and central units (1160) using a ranging scheme which is also useful in any other system transmitting data by frames in a distributed system where synchronizing the frames as between all units regardless of differences in propagation delays is necessary. Each frame in the SCDMA modulation scheme includes a gap or guardband containing no other data.

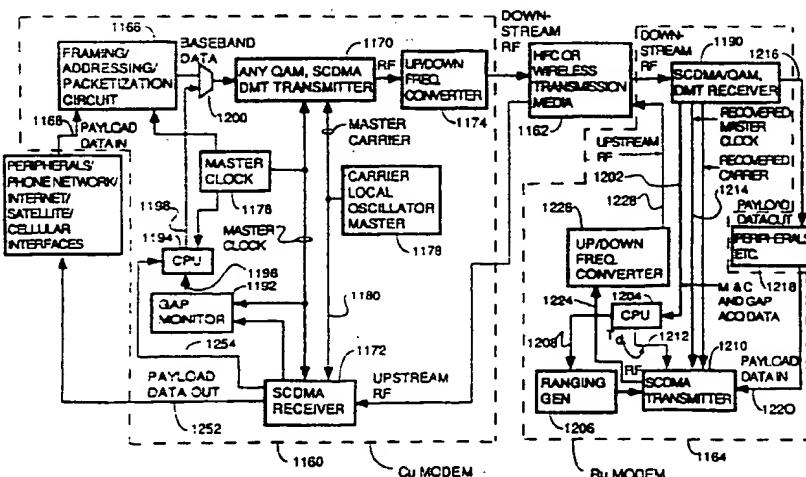


FIG. 49

BEST AVAILABLE COPY

EP 1 130 919 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 10 4541

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.CI)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<p>JOHANSSON A -L ET AL: "SUCCESSIVE INTERFERENCE CANCELLATION IN MULTIPLE DATA RATE DS/CDMA SYSTEMS" PROCEEDINGS OF THE VEHICULAR TECHNOLOGY CONFERENCE, US, NEW YORK, IEEE, vol. CONF. 45, 25 July 1995 (1995-07-25), pages 704-708, XP000551625 ISBN: 0-7803-2743-8 * abstract * * parts I, II and III *</p>	1-40	H04N7/173 H04L12/28 H04J11/00 H04J13/02 H04J3/06 H04B1/707 H04L5/02 H04L27/38
A	<p>AKIHIRO KAJIWARA ET AL: "SPREAD SPECTRUM DEMODULATOR USING BLOCK SIGNAL PROCESSING" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON COMMUNICATIONS, US, NEW YORK, IEEE, vol. -, 23 June 1991 (1991-06-23), pages 894-898, XP000269616 ISBN: 0-7803-0006-8 * abstract * * parts 1. and 2. *</p>	1-40	
A	<p>NEE VAN R D J: "TIMING ASPECTS OF SYNCHRONOUS CDMA" IEEE INTERNATIONAL SYMPOSIUM ON PERSONAL, INDOOR AND MOBILE RADIO COMMUNICATIONS, 1994, pages 439-443, XP000619815 * page 439 - page 440 *</p>	41-55	<p>TECHNICAL FIELDS SEARCHED (Int.Cl.)</p> <p>H04J H04B H04L</p>
			-/-
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search		Examiner
THE HAGUE	3 December 2001		Chauvet, C
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : Intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>S : member of the same patent family, corresponding document</p>			



European Patent
Office

1994-07-20 00:00:00

Application Number

EP 01 10 4541

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

-- see sheet B

- All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

BEST AVAILABLE COPY



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 10 4541

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim:	CLASSIFICATION OF THE APPLICATION (IPC/CL)
Category	Creation of document with indication, where appropriate, of relevant passages		
A	<p>KAZAMA H. ET AL.: "SEMI-AUTONOMOUS SYNCHRONIZATION AMONG BASE STATIONS FOR TDMA-TDD COMMUNICATIONS SYSTEMS" IEICE TRANSACTIONS ON COMMUNICATIONS, INSTITUTE OF ELECTRONICS INFORMATION AND COMM. ENG. TOKYO, JP, volume E77-B, no. 7, 1 July 1994 (1994-07-01), pages 862-856, XP000471316 ISSN: 0916-8516 * page 862 - page 864, column 2, line 4 *</p>	41-55	
A	<p>US 5 229 996 A (BAECKSTROEM TOMAS ET AL) 20 July 1993 (1993-07-20) * abstract *</p>	41-55	
TECHNICAL FIELDS SEARCHED (IPC/CL)			
A63B 7/00 A63C 17/00 A63D 1/00 A63D 13/00 A63D 15/00 A63D 17/00 A63D 21/00 A63D 23/00 A63D 25/00 A63D 27/00 A63D 29/00 A63D 31/00 A63D 33/00 A63D 35/00 A63D 37/00 A63D 39/00 A63D 41/00 A63D 43/00 A63D 45/00 A63D 47/00 A63D 49/00 A63D 51/00 A63D 53/00 A63D 55/00 A63D 57/00 A63D 59/00 A63D 61/00 A63D 63/00 A63D 65/00 A63D 67/00 A63D 69/00 A63D 71/00 A63D 73/00 A63D 75/00 A63D 77/00 A63D 79/00 A63D 81/00 A63D 83/00 A63D 85/00 A63D 87/00 A63D 89/00 A63D 91/00 A63D 93/00 A63D 95/00 A63D 97/00 A63D 99/00 A63G 1/00 A63G 3/00 A63G 5/00 A63G 7/00 A63G 9/00 A63G 11/00 A63G 13/00 A63G 15/00 A63G 17/00 A63G 19/00 A63G 21/00 A63G 23/00 A63G 25/00 A63G 27/00 A63G 29/00 A63G 31/00 A63G 33/00 A63G 35/00 A63G 37/00 A63G 39/00 A63G 41/00 A63G 43/00 A63G 45/00 A63G 47/00 A63G 49/00 A63G 51/00 A63G 53/00 A63G 55/00 A63G 57/00 A63G 59/00 A63G 61/00 A63G 63/00 A63G 65/00 A63G 67/00 A63G 69/00 A63G 71/00 A63G 73/00 A63G 75/00 A63G 77/00 A63G 79/00 A63G 81/00 A63G 83/00 A63G 85/00 A63G 87/00 A63G 89/00 A63G 91/00 A63G 93/00 A63G 95/00 A63G 97/00 A63G 99/00 A63H 1/00 A63H 3/00 A63H 5/00 A63H 7/00 A63H 9/00 A63H 11/00 A63H 13/00 A63H 15/00 A63H 17/00 A63H 19/00 A63H 21/00 A63H 23/00 A63H 25/00 A63H 27/00 A63H 29/00 A63H 31/00 A63H 33/00 A63H 35/00 A63H 37/00 A63H 39/00 A63H 41/00 A63H 43/00 A63H 45/00 A63H 47/00 A63H 49/00 A63H 51/00 A63H 53/00 A63H 55/00 A63H 57/00 A63H 59/00 A63H 61/00 A63H 63/00 A63H 65/00 A63H 67/00 A63H 69/00 A63H 71/00 A63H 73/00 A63H 75/00 A63H 77/00 A63H 79/00 A63H 81/00 A63H 83/00 A63H 85/00 A63H 87/00 A63H 89/00 A63H 91/00 A63H 93/00 A63H 95/00 A63H 97/00 A63H 99/00 A63J 1/00 A63J 3/00 A63J 5/00 A63J 7/00 A63J 9/00 A63J 11/00 A63J 13/00 A63J 15/00 A63J 17/00 A63J 19/00 A63J 21/00 A63J 23/00 A63J 25/00 A63J 27/00 A63J 29/00 A63J 31/00 A63J 33/00 A63J 35/00 A63J 37/00 A63J 39/00 A63J 41/00 A63J 43/00 A63J 45/00 A63J 47/00 A63J 49/00 A63J 51/00 A63J 53/00 A63J 55/00 A63J 57/00 A63J 59/00 A63J 61/00 A63J 63/00 A63J 65/00 A63J 67/00 A63J 69/00 A63J 71/00 A63J 73/00 A63J 75/00 A63J 77/00 A63J 79/00 A63J 81/00 A63J 83/00 A63J 85/00 A63J 87/00 A63J 89/00 A63J 91/00 A63J 93/00 A63J 95/00 A63J 97/00 A63J 99/00 A63K 1/00 A63K 3/00 A63K 5/00 A63K 7/00 A63K 9/00 A63K 11/00 A63K 13/00 A63K 15/00 A63K 17/00 A63K 19/00 A63K 21/00 A63K 23/00 A63K 25/00 A63K 27/00 A63K 29/00 A63K 31/00 A63K 33/00 A63K 35/00 A63K 37/00 A63K 39/00 A63K 41/00 A63K 43/00 A63K 45/00 A63K 47/00 A63K 49/00 A63K 51/00 A63K 53/00 A63K 55/00 A63K 57/00 A63K 59/00 A63K 61/00 A63K 63/00 A63K 65/00 A63K 67/00 A63K 69/00 A63K 71/00 A63K 73/00 A63K 75/00 A63K 77/00 A63K 79/00 A63K 81/00 A63K 83/00 A63K 85/00 A63K 87/00 A63K 89/00 A63K 91/00 A63K 93/00 A63K 95/00 A63K 97/00 A63K 99/00 A63L 1/00 A63L 3/00 A63L 5/00 A63L 7/00 A63L 9/00 A63L 11/00 A63L 13/00 A63L 15/00 A63L 17/00 A63L 19/00 A63L 21/00 A63L 23/00 A63L 25/00 A63L 27/00 A63L 29/00 A63L 31/00 A63L 33/00 A63L 35/00 A63L 37/00 A63L 39/00 A63L 41/00 A63L 43/00 A63L 45/00 A63L 47/00 A63L 49/00 A63L 51/00 A63L 53/00 A63L 55/00 A63L 57/00 A63L 59/00 A63L 61/00 A63L 63/00 A63L 65/00 A63L 67/00 A63L 69/00 A63L 71/00 A63L 73/00 A63L 75/00 A63L 77/00 A63L 79/00 A63L 81/00 A63L 83/00 A63L 85/00 A63L 87/00 A63L 89/00 A63L 91/00 A63L 93/00 A63L 95/00 A63L 97/00 A63L 99/00 A63M 1/00 A63M 3/00 A63M 5/00 A63M 7/00 A63M 9/00 A63M 11/00 A63M 13/00 A63M 15/00 A63M 17/00 A63M 19/00 A63M 21/00 A63M 23/00 A63M 25/00 A63M 27/00 A63M 29/00 A63M 31/00 A63M 33/00 A63M 35/00 A63M 37/00 A63M 39/00 A63M 41/00 A63M 43/00 A63M 45/00 A63M 47/00 A63M 49/00 A63M 51/00 A63M 53/00 A63M 55/00 A63M 57/00 A63M 59/00 A63M 61/00 A63M 63/00 A63M 65/00 A63M 67/00 A63M 69/00 A63M 71/00 A63M 73/00 A63M 75/00 A63M 77/00 A63M 79/00 A63M 81/00 A63M 83/00 A63M 85/00 A63M 87/00 A63M 89/00 A63M 91/00 A63M 93/00 A63M 95/00 A63M 97/00 A63M 99/00 A63P 1/00 A63P 3/00 A63P 5/00 A63P 7/00 A63P 9/00 A63P 11/00 A63P 13/00 A63P 15/00 A63P 17/00 A63P 19/00 A63P 21/00 A63P 23/00 A63P 25/00 A63P 27/00 A63P 29/00 A63P 31/00 A63P 33/00 A63P 35/00 A63P 37/00 A63P 39/00 A63P 41/00 A63P 43/00 A63P 45/00 A63P 47/00 A63P 49/00 A63P 51/00 A63P 53/00 A63P 55/00 A63P 57/00 A63P 59/00 A63P 61/00 A63P 63/00 A63P 65/00 A63P 67/00 A63P 69/00 A63P 71/00 A63P 73/00 A63P 75/00 A63P 77/00 A63P 79/00 A63P 81/00 A63P 83/00 A63P 85/00 A63P 87/00 A63P 89/00 A63P 91/00 A63P 93/00 A63P 95/00 A63P 97/00 A63P 99/00 A63R 1/00 A63R 3/00 A63R 5/00 A63R 7/00 A63R 9/00 A63R 11/00 A63R 13/00 A63R 15/00 A63R 17/00 A63R 19/00 A63R 21/00 A63R 23/00 A63R 25/00 A63R 27/00 A63R 29/00 A63R 31/00 A63R 33/00 A63R 35/00 A63R 37/00 A63R 39/00 A63R 41/00 A63R 43/00 A63R 45/00 A63R 47/00 A63R 49/00 A63R 51/00 A63R 53/00 A63R 55/00 A63R 57/00 A63R 59/00 A63R 61/00 A63R 63/00 A63R 65/00 A63R 67/00 A63R 69/00 A63R 71/00 A63R 73/00 A63R 75/00 A63R 77/00 A63R 79/00 A63R 81/00 A63R 83/00 A63R 85/00 A63R 87/00 A63R 89/00 A63R 91/00 A63R 93/00 A63R 95/00 A63R 97/00 A63R 99/00 A63S 1/00 A63S 3/00 A63S 5/00 A63S 7/00 A63S 9/00 A63S 11/00 A63S 13/00 A63S 15/00 A63S 17/00 A63S 19/00 A63S 21/00 A63S 23/00 A63S 25/00 A63S 27/00 A63S 29/00 A63S 31/00 A63S 33/00 A63S 35/00 A63S 37/00 A63S 39/00 A63S 41/00 A63S 43/00 A63S 45/00 A63S 47/00 A63S 49/00 A63S 51/00 A63S 53/00 A63S 55/00 A63S 57/00 A63S 59/00 A63S 61/00 A63S 63/00 A63S 65/00 A63S 67/00 A63S 69/00 A63S 71/00 A63S 73/00 A63S 75/00 A63S 77/00 A63S 79/00 A63S 81/00 A63S 83/00 A63S 85/00 A63S 87/00 A63S 89/00 A63S 91/00 A63S 93/00 A63S 95/00 A63S 97/00 A63S 99/00 A63T 1/00 A63T 3/00 A63T 5/00 A63T 7/00 A63T 9/00 A63T 11/00 A63T 13/00 A63T 15/00 A63T 17/00 A63T 19/00 A63T 21/00 A63T 23/00 A63T 25/00 A63T 27/00 A63T 29/00 A63T 31/00 A63T 33/00 A63T 35/00 A63T 37/00 A63T 39/00 A63T 41/00 A63T 43/00 A63T 45/00 A63T 47/00 A63T 49/00 A63T 51/00 A63T 53/00 A63T 55/00 A63T 57/00 A63T 59/00 A63T 61/00 A63T 63/00 A63T 65/00 A63T 67/00 A63T 69/00 A63T 71/00 A63T 73/00 A63T 75/00 A63T 77/00 A63T 79/00 A63T 81/00 A63T 83/00 A63T 85/00 A63T 87/00 A63T 89/00 A63T 91/00 A63T 93/00 A63T 95/00 A63T 97/00 A63T 99/00 A63U 1/00 A63U 3/00 A63U 5/00 A63U 7/00 A63U 9/00 A63U 11/00 A63U 13/00 A63U 15/00 A63U 17/00 A63U 19/00 A63U 21/00 A63U 23/00 A63U 25/00 A63U 27/00 A63U 29/00 A63U 31/00 A63U 33/00 A63U 35/00 A63U 37/00 A63U 39/00 A63U 41/00 A63U 43/00 A63U 45/00 A63U 47/00 A63U 49/00 A63U 51/00 A63U 53/00 A63U 55/00 A63U 57/00 A63U 59/00 A63U 61/00 A63U 63/00 A63U 65/00 A63U 67/00 A63U 69/00 A63U 71/00 A63U 73/00 A63U 75/00 A63U 77/00 A63U 79/00 A63U 81/00 A63U 83/00 A63U 85/00 A63U 87/00 A63U 89/00 A63U 91/00 A63U 93/00 A63U 95/00 A63U 97/00 A63U 99/00 A63V 1/00 A63V 3/00 A63V 5/00 A63V 7/00 A63V 9/00 A63V 11/00 A63V 13/00 A63V 15/00 A63V 17/00 A63V 19/00 A63V 21/00 A63V 23/00 A63V 25/00 A63V 27/00 A63V 29/00 A63V 31/00 A63V 33/00 A63V 35/00 A63V 37/00 A63V 39/00 A63V 41/00 A63V 43/00 A63V 45/00 A63V 47/00 A63V 49/00 A63V 51/00 A63V 53/00 A63V 55/00 A63V 57/00 A63V 59/00 A63V 61/00 A63V 63/00 A63V 65/00 A63V 67/00 A63V 69/00 A63V 71/00 A63V 73/00 A63V 75/00 A63V 77/00 A63V 79/00 A63V 81/00 A63V 83/00 A63V 85/00 A63V 87/00 A63V 89/00 A63V 91/00 A63V 93/00 A63V 95/00 A63V 97/00 A63V 99/00 A63W 1/00 A63W 3/00 A63W 5/00 A63W 7/00 A63W 9/00 A63W 11/00 A63W 13/00 A63W 15/00 A63W 17/00 A63W 19/00 A63W 21/00 A63W 23/00 A63W 25/00 A63W 27/00 A63W 29/00 A63W 31/00 A63W 33/00 A63W 35/00 A63W 37/00 A63W 39/00 A63W 41/00 A63W 43/00 A63W 45/00 A63W 47/00 A63W 49/00 A63W 51/00 A63W 53/00 A63W 55/00 A63W 57/00 A63W 59/00 A63W 61/00 A63W 63/00 A63W 65/00 A63W 67/00 A63W 69/00 A63W 71/00 A63W 73/00 A63W 75/00 A63W 77/00 A63W 79/00 A63W 81/00 A63W 83/00 A63W 85/00 A63W 87/00 A63W 89/00 A63W 91/00 A63W 93/00 A63W 95/00 A63W 97/00 A63W 99/00 A63X 1/00 A63X 3/00 A63X 5/00 A63X 7/00 A63X 9/00 A63X 11/00 A63X 13/00 A63X 15/00 A63X 17/00 A63X 19/00 A63X 21/00 A63X 23/00 A63X 25/00 A63X 27/00 A63X 29/00 A63X 31/00 A63X 33/00 A63X 35/00 A63X 37/00 A63X 39/00 A63X 41/00 A63X 43/00 A63X 45/00 A63X 47/00 A63X 49/00 A63X 51/00 A63X 53/00 A63X 55/00 A63X 57/00 A63X 59/00 A63X 61/00 A63X 63/00 A63X 65/00 A63X 67/00 A63X 69/00 A63X 71/00 A63X 73/00 A63X 75/00 A63X 77/00 A63X 79/00 A63X 81/00 A63X 83/00 A63X 85/00 A63X 87/00 A63X 89/00 A63X 91/00 A63X 93/00 A63X 95/00 A63X 97/00 A63X 99/00 A63Y 1/00 A63Y 3/00 A63Y 5/00 A63Y 7/00 A63Y 9/00 A63Y 11/00 A63Y 13/00 A63Y 15/00 A63Y 17/00 A63Y 19/00 A63Y 21/00 A63Y 23/00 A63Y 25/00 A63Y 27/00 A63Y 29/00 A63Y 31/00 A63Y 33/00 A63Y 35/00 A63Y 37/00 A63Y 39/00 A63Y 41/00 A63Y 43/00 A63Y 45/00 A63Y 47/00 A63Y 49/00 A63Y 51/00 A63Y 53/00 A63Y 55/00 A63Y 57/00 A63Y 59/00 A63Y 61/00 A63Y 63/00 A63Y 65/00 A63Y 67/00 A63Y 69/00 A63Y 71/00 A63Y 73/00 A63Y 75/00 A63Y 77/00 A63Y 79/00 A63Y 81/00 A63Y 83/00 A63Y 85/00 A63Y 87/00 A63Y 89/00 A63Y 91/00 A63Y 93/00 A63Y 95/00 A63Y 97/00 A63Y 99/00 A63Z 1/00 A63Z 3/00 A63Z 5/00 A63Z 7/00 A63Z 9/00 A63Z 11/00 A63Z 13/00 A63Z 15/00 A63Z 17/00 A63Z 19/00 A63Z 21/00 A63Z 23/00 A63Z 25/00 A63Z 27/00 A63Z 29/00 A63Z 31/00 A63Z 33/00 A63Z 35/00 A63Z 37/00 A63Z 39/00 A63Z 41/00 A63Z 43/00 A63Z 45/00 A63Z 47/00 A63Z 49/00 A63Z 51/00 A63Z 53/00 A63Z 55/00 A63Z 57/00 A63Z 59/00 A63Z 61/00 A63Z 63/00 A63Z 65/00 A63Z 67/00 A63Z 69/00 A63Z 71/00 A63Z 73/00 A63Z 75/00 A63Z 77/0			

European Patent
OfficeTHE EUROPEAN PATENT OFFICE - A UNIT OF THE EUROPEAN COMMISSION
LACK OF UNITY OF INVENTION
SHEET BApplication Number
EP 01 10 4541

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-40

Remote unit modem to transmit digital data upstream to a headend modem or method of transmitting digital data upstream to a headend modem

2. Claims: 41-55

Remote unit modem to transmit digital data upstream to a headend modem or process of bidirectional digital data communication carried out by remote unit modem to exchange digital data transmissions with a headend modem

BEST AVAILABLE COPY

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 10 4541

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on

The European Patent Office is in no way liable for those particulars which are merely given for the purpose of information.

03-12-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5229996 A	20-07-1993	AU 653778 B2	13-10-1994
		AU 1125292 A	03-09-1992
		CA 2061872 A1	29-08-1992
		GB 2254226 A, B	30-09-1992
		JP 3088819 B2	18-09-2000
		JP 5068002 A	19-03-1993
		KR 226125 B1	15-10-1999
		SE 9200575 A	29-08-1992

• 11 •

1. *Chlorophytum comosum* (L.) Willd. (Fig. 1) is a common species throughout the tropics. It has a large, bulbous, underground rhizome from which several long, slender, upright, grass-like leaves grow. The leaves are green with prominent white midribs.

• 127 • 亂世之亂世

在於此處，我真希望你能夠到來，和我一起吃飯，一起談話，一起散步，一起遊覽，一起欣賞這裏的風景。

1. *Chlorophytum comosum* L. (Liliaceae) - This plant is a common ground cover in the region, often found in shaded areas under trees. It has long, thin, strap-like leaves and small, white flowers.

THIS

PAGE

Digitized by Google

NIK (USA)

卷之三